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Abstract

THE NEW SEPARATION PLANT WINDSCALE - DESIGN OF PLANT AND PLANT CONTROL METHODS

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The first chemical separation plant at Windscale was designed to reprocess low irradiated fuel from the air cooled Windscale reactors and, after modification and additional plant installation, has reprocessed the fuel from the Calder Hall and Chapelcross reactors.

To deal with future arisings from the expanding U.K. Civil Nuclear Power programme a new separation plant has been built at Windscale. This paper describes the design of the new plant, the methods of control and the associated instrumentation system.

The design philosophy which was applied to the new plant is described and an outline is given of the main considerations in siting, layout, activity segregation, nuclear safety, maintenance, ventilation, shielding and containment.

A description of the plant is given for the various operations of fuel cooling, decanning, dissolving, solvent extraction operations, thermal denitration and liquid waste disposal.

The essentials of plant operation are discussed together with the principal methods of plant control used. This is followed by a discussion of instrument requirements and mention is made in particular of new instrument features which have been incorporated in the design.

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